

#4 Adding & Subtracting Polynomials

Concept 7 & 8: Students should be able to add and subtract polynomials.

You need a blank sheet of paper.

To add and subtract polynomials, combine like terms. In a polynomial, like terms have the same variables and are raised to the same powers.

Example 1:

Add $2x^2 + 6x + 5$ and $3x^2 - 2x - 1$

$$\begin{array}{r} 2x^2 + 6x + 5 + 3x^2 - 2x - 1 \\ \hline 5x^2 + 4x + 4 \end{array}$$

Example 2:

$$(8m^2 + 3m - 7) + (8m + 1 - 8m^2)$$

$$\begin{array}{r} \cancel{8m^2} + 3m - 7 + 8m + 1 - \cancel{8m^2} \\ \hline 11m - 6 \end{array}$$

Example 3:

$$(3x^2 + xy - 5y^2) - (2x^2 - xy + 3y^2)$$

$$\begin{array}{r} 3x^2 + xy - 5y^2 - 2x^2 + xy - 3y^2 \\ \hline x^2 + 2xy - 8y^2 \end{array}$$

Example 4:

$$(5y^2 + 2xy - 9) - (2y^2 + 2xy - 3)$$

$$\begin{array}{r} 5y^2 + 2xy - 9 - 2y^2 - 2xy + 3 \\ \hline 3y^2 - 6 \end{array}$$

Additional Practice (This is still a part of this assignment, so staple it to the notebook paper.)



Exit Slip

Get a half sheet of paper out for the exit slip! You will need to copy the problem and then find the answer.

1. $(2a - 4a^3) - (-3a^2 + a^3 + 7a)$

2. $(8v^4 - 3v + 5v^2) + (3v^2 + v^4 - 10)$

$$\begin{array}{r} 2a - 4a^3 + 3a^2 - a^3 - 7a \\ \hline -5a^3 + 3a^2 - 5a \end{array}$$

$$\begin{array}{r} 8v^4 - 3v + 5v^2 + 3v^2 + v^4 - 10 \\ \hline 9v^4 + 8v^2 - 3v - 10 \end{array}$$

Complete work on a separate sheet of paper.

#4

Additional Practice

Name _____

Adding and Subtracting Polynomials

1) $(3x + 5 + 4x^3) + (6 - x^3 - 2x)$

2) $(2n^2 + 7n + 4n^3) + (5n^3 + n - 8n^2)$

3) $(r + 6r^3 + 4r^2) - (3r^3 + 6r + 3r^2)$

4) $(6r^3 + 4r^2 + r) - (6r - 8r^3 - 2r^2)$

5) $(4x^4 + 1 + 2x^3) + (8x^4 - 4 - x^3 + 5x)$

6) $(4 + 4v^3 + 6v^2) - (2v^2 - 6 + 3v^3 + 3v)$

7) $(6b^4 + 8b^3 - b - 2) + (8b^2 - 1 + b^4 - b^3)$

8) $(7 + 3n^3 - 2n + 7n^2) - (7n^4 - 7n^2 - 4 - 5n)$

Complete work on a separate sheet of a paper.

#4

Additional Practice

Name _____

Adding and Subtracting Polynomials

1) $(3x + 5 + 4x^3) + (6 - x^3 - 2x)$

2) $(2n^2 + 7n + 4n^3) + (5n^3 + n - 8n^2)$

3) $(r + 6r^3 + 4r^2) - (3r^3 + 6r + 3r^2)$

4) $(6r^3 + 4r^2 + r) - (6r - 8r^3 - 2r^2)$

5) $(4x^4 + 1 + 2x^3) + (8x^4 - 4 - x^3 + 5x)$

6) $(4 + 4v^3 + 6v^2) - (2v^2 - 6 + 3v^3 + 3v)$

7) $(6b^4 + 8b^3 - b - 2) + (8b^2 - 1 + b^4 - b^3)$

8) $(7 + 3n^3 - 2n + 7n^2) - (7n^4 - 7n^2 - 4 - 5n)$

$$1. \quad \underbrace{(3x)} + 5 + 4x^3 + 6 - \underbrace{x^3} - \underbrace{(2x)} \\ \underline{\quad 3x^3 + x + 11 \quad}$$

$$2. \quad \underbrace{(2n^2)} + 7n + 4n^3 + 5n^3 + n - \underbrace{(8n^2)} \\ \underline{\quad 9n^3 - 6n^2 + 8n \quad}$$

$$3. \quad r + \underbrace{6r^3} + \underbrace{4r^2} - 3r^3 - 6r - \underbrace{(3r^2)} \\ \underline{\quad 3r^3 + r^2 - 5r \quad}$$

$$4. \quad \underbrace{6r^3} + \underbrace{4r^2} + r - 6r + \underbrace{8r^3} + \underbrace{2r^2} \\ \underline{\quad 14r^3 + 6r^2 - 5r \quad}$$

$$5. \quad \underline{4x^4} + 1 + \underbrace{(2x^3)} + 8x^4 - 4 - \underbrace{(x^3)} + 5x \\ \underline{\quad 12x^4 + x^3 + 5x - 3 \quad}$$

$$6. \quad 4 + 4v^3 + \underbrace{(6v^2 - 2v^2)} + 6 - 3v^3 - 3v \\ \underline{\quad v^3 + 4v^2 - 3v + 10 \quad}$$

$$7. \quad \underline{6b^4} + \underbrace{(8b^3)} - b - 2 + 8b^2 - 1 + b^4 - \underbrace{(b^3)} \\ \underline{\quad 7b^4 + 7b^3 + 8b^2 - b - 3 \quad}$$

$$8. \quad 7 + 3n^3 - 2n + 7n^2 - 7n^4 + 7n^2 + 4 + 5n \\ \underline{\quad -7n^4 + 3n^3 + 14n^2 + 3n + 11 \quad}$$